

The FSIS Salmonella Action Plan: A Two Year Update

February 2016

Introduction

Preventing foodborne illness and protecting public health are the primary functions of the U.S. Department of Agriculture's (USDA) Food Safety and Inspection Service (FSIS). The leading cause of bacterial foodborne illness in the United States is *Salmonella*. An estimated 1.2 million illnesses are thought to be caused every year by *Salmonella*, with approximately 375,000 *Salmonella* illnesses attributed to FSIS-regulated products in Fiscal Year (FY) 2015. After a decade in which there was little progress in bringing down the rate of illness from *Salmonella*, the FSIS Administrator established the Strategic Performance Working Group (SPWG) in 2012 to critically review data and to solicit and coordinate new ideas within the Agency on how to improve the Agency's performance. Its first target was *Salmonella*.

On December 4, 2013, FSIS released its *Salmonella* Action Plan (hereafter referred to as the Plan), which outlined a list of priority near-term and longer-term actions developed by the SPWG that the Agency intended to take to address *Salmonella* in FSIS-regulated products.

This update summarizes accomplishments during the past two years. Because most of the actions listed in the Plan have been completed or are nearing completion, FSIS will not provide future Plan-specific updates. FSIS considers the Plan to have fulfilled its purpose of focusing FSIS' *Salmonella*-related activities. Any remaining actions will be completed through the regular course of the Agency's work. While the Agency prides itself on the completion of the activities detailed in the Plan, it also re-affirms its commitment to the goal of reducing *Salmonella* illnesses caused by FSIS-regulated products, and looks forward to building on the successes and progress achieved through the Plan.

FSIS Accomplishments and Ongoing Activities

1. Modernization of Poultry Slaughter Inspection

FSIS identified ways to modernize the regulation of poultry slaughter and estimated that changes in certain inspection activities are likely to result in a reduction of nearly 5,000 illnesses per year in the United States attributed to *Salmonella* and *Campylobacter*.

2014 Accomplishments

In August, 2014, FSIS published *Modernization of Poultry Slaughter Inspection; Final Rule* in the Federal Register. The Modernization of Poultry Slaughter Inspection regulation made the first major updates to U.S. poultry inspections in more than 50 years. The new requirements mandate that all poultry companies take scientifically-based measures to prevent contamination, rather than addressing it after it occurs. For the first time, poultry facilities will be required to perform their own microbiological testing to demonstrate that they are controlling for pathogens

that cause illness, like *Salmonella* and *Campylobacter*. When fully implemented, poultry companies will have to meet new control requirements for these bacteria.

This final rule promulgated the New Poultry Inspection System (NPIS) and an associated tiered implementation plan. It also imposed new testing requirements on establishments and announced that enteric pathogens, such as *Salmonella* and *Campylobacter*, are hazards reasonably likely to occur in the poultry slaughter process. The publication of the Final Rule in the Federal Register fulfilled the Agency's commitment for this item.

2015 Accomplishments

FSIS implemented the requirement that all poultry slaughter plants perform indicator organism testing at two points in the production process. During 2015, establishments that had been in the HACCP Inspection Models Project (HIMP) began implementing the new inspection system. All HIMP-establishments had successfully converted to NPIS by November 2015. In addition, several non-HIMP-establishments also converted to the new inspection system in 2015. With the implementation of this new inspection system, and the new recordkeeping and testing requirements, FSIS considers the Agency to have completed the actions in the Plan related to the modernization of the poultry slaughter system. It is now up to industry to take actions to realize the full potential of this new program.

2. Sampling Related Activities

To ensure that FSIS is sampling for *Salmonella* in line with current and emerging trends in foodborne illness, FSIS committed to undertaking a number of actions consistent with the Agency's data-driven approach to preventing illnesses as outlined in its sampling plan. These sampling initiatives enable FSIS to better assess the various types of meat and poultry products contributing to *Salmonella* illnesses and take steps to address the levels of *Salmonella* in those products.

2014 Accomplishments

FSIS initiated a sampling program to estimate the national prevalence of *Salmonella* in comminuted poultry products. Data from this program are published in the FSIS quarterly *Salmonella* report. In FY 2014, FSIS gathered sufficient data to estimate national prevalence of *Salmonella* in comminuted poultry products for use in the development of new performance standards. FSIS also initiated a sampling program for raw pork products—with initial sampling beginning at retail—to evaluate *Salmonella* levels in different raw pork products. Overall, 100% of the Agency's commitments for the first year under the plan were met.

2015 Accomplishments

On January 26, 2015, FSIS proposed performance standards for chicken parts and comminuted poultry in the Federal Register. FSIS reviewed public comments on the proposed performance standards for comminuted poultry and for chicken parts, and published final performance standards on February 4, 2016. FSIS continued its comminuted poultry sampling program to

monitor the industry until the performance standards were finalized and continued exploratory mechanically-separated poultry sampling with a program that began in June, 2015. In addition, a sampling program for chicken parts (legs, breasts, and wings) began in March, 2015. FSIS plans to begin exploratory sampling of additional types of chicken parts, as well as religious-exempt and low-volume establishments, which were formerly excluded from Agency sampling.

In May 2015, FSIS continued its exploratory sampling program for various types of raw pork products, with sampling conducted in Federally-regulated establishments. FSIS is continuing to collect raw pork products to assess *Salmonella* level in raw pork products (other than carcasses) for the first time. The Agency will analyze the data from this exploratory program to consider whether performance standards are warranted on the basis of these results. In order to continually improve its sampling programs, FSIS also developed a five-year sampling plan that identified gaps and exceptions in FSIS sampling programs. FSIS plans to publish the five-year sampling plan on its website early in Calendar Year (CY) 2016. Through all of the above accomplishments and with the publication of its sampling plan, FSIS will consider this goal to be 100% complete.

3. Develop New In-plant Strategies

FSIS has been working to ensure that its inspection resources are focused on the areas of greatest concern in a given establishment, while still assessing its overall performance. FSIS is committed to providing inspection program personnel (IPP) with more information to help them identify areas of concern and to provide a strong foundation for enforcement actions should they be necessary.

2014 Accomplishments

To better understand how establishments producing comminuted poultry are addressing the problems that they confront, during 2014 FSIS conducted Hazard Analysis Verifications (HAVs) in 258 of the 260 FSIS-regulated establishments that produce comminuted poultry. FSIS also began conducting Food Safety Assessments (FSAs) in all of these establishments. As of November 2014, FSIS had completed FSAs in 154 establishments that produce comminuted poultry. FSIS fulfilled 100% of the expectations for the first year under the plan.

2015 Accomplishments

In 2015, FSIS completed FSAs in all the remaining establishments that produce comminuted poultry. FSIS also began conducting HAVs, similar to those that were performed the previous year, once per quarter at establishments. The results of the HAVs were analyzed to determine noncompliance rates for these tasks. FSIS also made available report in the Public Health Information System (PHIS) that allows inspectors and industry users to generate a summary of an establishment's performance on public health regulations (PHR) for any given month, allowing inspectors and industry to be better informed about an establishment's performance characteristics. In addition, the Public Health Risk Evaluation (PHRE) tool was launched. The PHRE tool is used by Enforcement, Investigations and Analysis Officers (EIAOs) to broadly assess establishments and determine whether a FSA or an enforcement action may be warranted,

based on sampling and inspection data in PHIS. Thus, FSIS considers the obligations of this goal to have been fully met.

4. Develop a Directive for Sanitary Dressing in Hogs

Foodborne illness outbreak data indicates that pork products contribute significantly to *Salmonella* illnesses. Decreasing contamination from poor sanitary dressing procedures in hog slaughter establishments will decrease the likelihood of *Salmonella* contamination on hog carcasses. FSIS does not have a Directive for verification activities related to sanitary dressing in hog slaughter establishments.

2014 Accomplishments

In 2014 FSIS developed a draft Directive for Hog Sanitary Dressing. The Agency began developing training materials to implement before finalizing and issuing the directive. Because the draft directive had not yet published, this goal was considered to be 75% complete for the first year under the plan.

2015 Accomplishments

Through developing the draft directive, FSIS found it necessary to reevaluate the best inspection methods and activities for FSIS in-plant personnel in hog slaughter facilities. The Agency continues to shape those methods and activities and to determine how to best convey the information to employees. Although the specific actions related to this item have shifted slightly, the Plan served its purpose by focusing Agency attention on potential *Salmonella* contamination on hog carcasses using illness data as an indicator, despite the low percent positives recorded in earlier hog carcass sampling programs. The Plan provided the impetus for future improvements to hog slaughter inspection. The Agency considers this goal to be 100% complete.

5. Consider Modifying How FSIS Posts *Salmonella* Categories

FSIS analyses indicated that posting information on the FSIS website on individual establishment performance under the *Salmonella* carcass standards for young chickens led to improved control of the pathogen. This information is also valuable to companies that purchase chicken meat for further processing. Therefore, FSIS believes that making information about the performance of establishments publically available will provide an incentive for industry to improve process control.

2015 Accomplishments

In its January 26, 2015 *Federal Register Notice* (FRN)—in addition to proposing standards for chicken parts and comminuted poultry—FSIS proposed listing the names of chicken slaughter plants in each performance category on its website. FSIS continues to evaluate *Salmonella* results to assess the effectiveness of FSIS policies and identify ways to facilitate improvements for the industry. The Agency considers this goal to be 100% complete.

6. Other Performance Standard Related Activities

Aligning FSIS *Salmonella* performance standards to Healthy People 2020 (HP2020) goals and focusing activities on improving the performance of establishments relative to those standards will move the Agency closer to meeting these foodborne illness reduction goals.

2014 Accomplishments

FSIS conducted risk assessments to identify performance standards targeted to meet the HP2020 *Salmonella* goals. FSIS made significant progress toward achieving this element of the plan in FY2014.

2015 Accomplishments

On the basis of the advances made in 2014, the Agency proposed—in the January 26, 2015 FRN—establishing inaugural performance standards for chicken parts and revising the performance standards for comminuted poultry to make them stricter. Both of those standards, if implemented, will rely on continuous sampling that would allow for an assessment of *Salmonella* prevalence as well as routine monthly verification sampling in establishments, replacing the previous set-based sampling program which only collected samples at establishments for a specific number of consecutive days with a year or more between sets. As stated above, FSIS reviewed public comments on the proposed performance standards for comminuted poultry and for chicken parts, and published final performance standards on February 4, 2016 and considers the action to be 100% complete.

7. Develop New Enforcement Strategies

On a continual basis, FSIS evaluates inspection data to identify and refine enforcement strategies. Current efforts are focused on developing a robust systems approach that links all relevant data from an establishment to assess its overall performance.

2014 Accomplishments

This goal did not contain any FY2014 activities.

2015 Accomplishments

FSIS has been developing best practice and guidance documents for the meat and poultry industry to develop a robust systems approach for assessing an establishment's performance. On September 4, 2015, FSIS published the veal slaughter guidance document, "Sanitary Dressing and Antimicrobial Implementation at Veal Slaughter Establishments: Identified Issues and Best Practices." This document was developed to address STEC issues in veal, but it also contains recommended best practices that help mitigate *Salmonella*. FSIS published the revised "*FSIS Compliance Guidelines for Controlling Salmonella and Campylobacter in Raw Poultry*" on December 11, 2015. In addition, the guidance document, "Compliance Guidelines for Minimizing the Risk of STEC and *Salmonella* in Beef (including Veal) Slaughter Operations,"

has been submitted for review and should be published in FY2016. Publication of this document will complete this action item.

8. Explore the Contribution of Lymph Nodes to *Salmonella* Contamination

Because *Salmonella* can reside inside of beef lymph nodes, FSIS is exploring the potential contribution of lymph nodes to *Salmonella* contamination in FSIS-regulated products.

2014 Accomplishments

FSIS partnered with other USDA agencies – the Agricultural Research Service (ARS) and the Agricultural Marketing Service (AMS) – and conducted discussions with industry to evaluate the contributions that lymph nodes make to *Salmonella* contamination. FSIS and the USDA Economic Research Service (ERS) also compared the percentage of positive *Salmonella* samples in ground beef purchased by AMS for the National School Lunch Program with other FSIS-inspected ground beef. Although the percentage of samples that tested positive for *Salmonella* is significantly lower in the AMS-purchased ground beef compared to the other ground beef, confounding factors made it impossible to directly attribute differences to the presence or absence of lymph nodes. Given that the work was completed, but the results of the analysis inconclusive, this goal was considered to be 75% complete for the first year under the plan.

2015 Accomplishments

FSIS continued to review information on how inspection and inclusion of different lymph nodes in ground beef affects *Salmonella* contamination in the product. Current activities include partnering with ARS to explore the potential public health impacts of *Salmonella* in lymph nodes. As FSIS is considering options for modernization of beef and swine slaughter, the Agency is also discussing how to decrease the potential for contamination from lymph nodes. In addition, FSIS is considering increasing the sampling of “other” ground beef components, such as head meat and cheek meat, and possible targeting of lymph nodes in certain situations. Data from this increased sampling will allow FSIS to better understand how *Salmonella* potentially residing within lymph nodes may affect the contamination of raw ground beef. Moreover, the guidance document, “Compliance Guidelines for Minimizing the Risk of STEC and *Salmonella* in Beef (including Veal) Slaughter Operations,” planned for publication in 2016 contains several recommendations concerning lymph nodes. These recommendations include removal of major carcass lymph nodes, applying treatment to heads after lymph nodes have been incised to address potential contamination, and sending head and cheek meat for cooking or other full-lethality treatment (e.g. high pressure processing or irradiation). Given these developments, FSIS considers it has completed the lymph node-related actions in the Plan.

9. Pre-harvest Related Activities

Pre-harvest contamination can affect the level of *Salmonella* on FSIS-regulated products. Synthesizing information on pre-harvest interventions could help identify appropriate practices to decrease the prevalence or levels of *Salmonella* on FSIS-regulated products.

2014 Accomplishments

Rather than developing a stand-alone document, information about pre-harvest interventions that could reduce the incoming *Salmonella* load was collected from previous public meetings and included in a draft guidance document developed in 2014. By the end of 2014, the document was in Agency clearance and this action was determined to be 50% complete for the first year.

2015 Accomplishments

After incorporating changes through clearance process, including pre-harvest interventions, FSIS published the revised *FSIS Compliance Guidelines for Controlling Salmonella and Campylobacter in Raw Poultry* on December 11, 2015.

As part of its ongoing efforts to reduce *Salmonella*, FSIS will continue to analyze the data that becomes available in the literature on pre-harvest activities, and it will evaluate whether to recommend further changes to pre-harvest practices to reduce *Salmonella* contamination. FSIS considers its commitments to pre-harvest related activities under the Plan to be 100% complete.

10. Focus the Agency's Education and Outreach Tools and Resources on *Salmonella*

FSIS has long maintained that new approaches or routes for providing *Salmonella*-related food safety messages to the public could help decrease *Salmonella* illnesses.

2014 Accomplishments

In 2014, FSIS developed a two-part webinar series about food safety. Several hundred people attended the September 10, 2014 session during which food safety experts discussed common foodborne illnesses, specifically *Salmonella*. Additionally in 2014, the Agency continued to utilize FoodSafety.gov as an outreach tool, including creating and posting to a well-received *Salmonella* blog on the web site throughout the year. The Agency also conducted two Twitter chats about *Salmonella* in June. FSIS worked with the Ad Council to develop 15- and 30-second public service announcements (PSAs) (TV and radio, English and Spanish) and digital advertising to specifically address *Salmonella*. The ads positively influenced proper thermometer use. Although the Agency made great progress with webinars, blogs and Twitter in 2014, it did not fully develop or provide information through the USDA Food and Nutrition Service (FNS) nutrition programs as it committed to do in 2014 in the Plan. Thus, this action was determined to be 75% complete for the first year under the plan.

2015 Accomplishments

In 2015, FSIS worked with the Ad Council to develop short instructional videos explaining the science behind USDA food safety recommendations, and how pathogens, such as *Salmonella*, affect day-to-day life. FSIS also published an infographic in collaboration with ERS that shows the economic impact of *Salmonella*, the food vectors for *Salmonella* outbreaks, the symptoms of salmonellosis, and how to prevent salmonellosis. This infographic was shared via social media in March 2015 and through FoodSafety.gov. In addition, FSIS worked with Women, Infant and

Children (WIC) Centers in multiple states to develop tool kits that will help WIC recipients understand more about food safety and foodborne illnesses, including *Salmonella*. FSIS is continuing to develop web resources addressing *Salmonella* and is identifying any existing web-resources that may require updating to maintain relevancy and accuracy. FSIS plans to continue these outreach efforts, but considers this action item on the Plan to be 100% complete.

Summary

FSIS has completed nearly all of the activities listed in *Salmonella* Action Plan at this time, and most items that remain are in very late stages of completion, such as final document clearance with likely publication dates in 2016. FSIS therefore considers that it has accomplished the commitments made in the Plan, which are the groundwork for improved inspection, production practices, and education. Through these actions and accomplishments, FSIS has achieved its main objective in developing the Plan: to better focus *Salmonella*-related activities with a long-term goal of reducing *Salmonella* illnesses. A number of the items in the plan are not one-time actions, but are changes that the Agency implemented in how it will conduct its business going forward. The Agency anticipates that the Plan will have long-lasting effects to reduce *Salmonella* illnesses. FSIS realizes that the Plan has not resulted in and could not have resulted in the elimination of *Salmonella* illnesses. Although the Agency will no longer monitor its accomplishments against the Plan, it will continue to explore and evaluate new approaches and methods to decrease *Salmonella* illnesses and will continue to monitor its progress through the number of *Salmonella* illnesses associated with FSIS-regulated products.

The ERS reports for foodborne illness are available at <https://www.ers.usda.gov/data-products/cost-estimates-of-foodborne-illnesses>.